BERYL FINANCE

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Abstract

Beryl finance is a Micro-finance and JobFi project on the Algorand blockchain. The purpose of Beryl Finance is to build the micro financing platform for both freelancers and recruiters to connect and work together, while also cultivating a healthy ecosystem for SMEs.

Algorand is a layer-1 blockchain development platform centred on scalability and ease of use, and will power the Beryl dApp. This paper presents a financial and a freelancing platform operating on a decentralized network (referred to as "Beryl dApp", or "The Platform"). The Platform is built on a blockchain and includes a protocol token called Beryl Token which users such as entrepreneurs, freelancers, talents and recruiters can utilize for job application and creation. The protocol used on the dApp is qualified to be unique centred on ease of access and use for transactions.

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Introduction

We have seen the rise of SMEs during remote work due to the COVID-19 pandemic gain massive adoption[1][2]. More than 1 in 3 Americans freelance this year. Over the last five years, people are increasingly making the choice to freelance and start a small business, the freelance workforce has grown by 3.7 million to 56.7 million Americans freelancing today[3] . Beryl Finance is a joint JobFi and SME initiative that is developing a decentralized platform for entrepreneurs, freelancers and recruiters on the Algorand blockchain to ensure ease and low transactions cost, mitigate job scams through the use of smart contracts on a decentralized application. The platform's future plan is to incorporate micro-finance banking model to support small-to-medium enterprise (SMEs) following global plans of adoption of blockchain, hence the word beryl 'finance'.

The practice of microfinance is not new in the world. Various nations have always tried to provide their citizens with needed finances through informal microfinance approaches like Self-Help Groups (SHGs), Mortgages, Rotating Savings and Credit Associations, (ROSCAs), Accumulating Credit and Savings Associations (ASCAs) and direct borrowings from friends and relations[4]. A large number of governments in developing countries have attempted to decentralize development planning and management responsibilities during the past decade.

Decentralization has taken a number of forms – de-concentration of functions within the central bureaucracy, delegation of semi-autonomous or quasi-public corporations, devolution to local governments, and the transfer of functions to non-government organizations. The results have been mixed. In some countries decentralization has resulted in greater participation in developmental activities, more effective and efficient administration of local and rural development programs, and expanded administrative capacity outside of the national capital. But in nearly all countries where government have attempted to decentralize, they have faced serious problems of implementation [5]

Beryl dApp

Freelancers and start-ups could provide each other with promising opportunities that lead to mutual growth, by improving software development metrics, such as cost, time, and quality[6] . This is at first a web app created with a mediating factor between the freelancers and recruiters or clients coupled with a dashboard for each connected wallet address, each dashboard has a history of transactions, active jobs, completed jobs, appealed jobs, applied jobs and created jobs. While freelancing is marred by online scams, payment hurdles and frustrating cuts by middle men known as financial institutions. This platform will seek to solve all these issues in a unique way allowing funds to be released directly to a client's wallet with absolute speed, at the required time and at the right amount.

[1] Margrethe H Olson and New York, 'REMOTE OFFICE WORK : CHANGING WORK PATTERNS IN SPACE AND TIME',
    [2] .3 (1983).

[3] Commisioned B Y Upwork and Freelancers Union, 'Freelancing in America : 2018', October, 2018.

[4] Ikechukwu A. Acha, 'Microfinance Banking in Nigeria : Problems and Prospects', *International Journal of Finance and Accounting*, 1.5 (2012), 106–11 <https://doi.org/10.5923/j.ijfa.20120105.04>.

[5] Patrick Ong and Scott Fritzen, *Decentralization in Developing Countries*, *Encyclopedia of Public Administration and Public Policy, Second Edition (Print Version)*, 2007 <https://doi.org/10.1201/noe1420052756.ch96>.

[6] Varun Gupta, Jose Maria Fernandez-crehuet, and Chetna Gupta, 'Freelancing Models for Fostering Innovation and Problem Solving in Software Startups : An Empirical Comparative Study', 2020.
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Many freelancing platforms like Upwork, Fiverr, indeed etc. offer great services to their users but are marred by complaints from job seeker or recruiters getting scammed, reversed payments by PayPal after job completions, payment withhold, enormous transaction fees by the freelancing platform, payment delay, cost of job creation and application, endless identity verifications and sometimes freelancers face a problem of drop in monetary value with respect to currency conversion platforms among others. Our dApp is built to be transparent, allowing job offers and payments through a blockchain to remove enormous middlemen charges, mitigate scams, with the use of smart contracts to enable fast, cheap and verifiable transactions.

Smart Contracts

The Beryl Smart Contracts will be written using the TEAL (Transaction Execution Approval Language) programming language, and compiled to the Algorand Virtual Machine. TEAL's modularity will also allow for Beryl Smart Contracts to become the standard for such applications. The term "smart contract" was first coined in mid- 1990s by computer scientist and cryptographer Szabo, who defined a smart contract as "a set of promises, specified in digital form, including protocols within which the parties perform on these promises[7]."
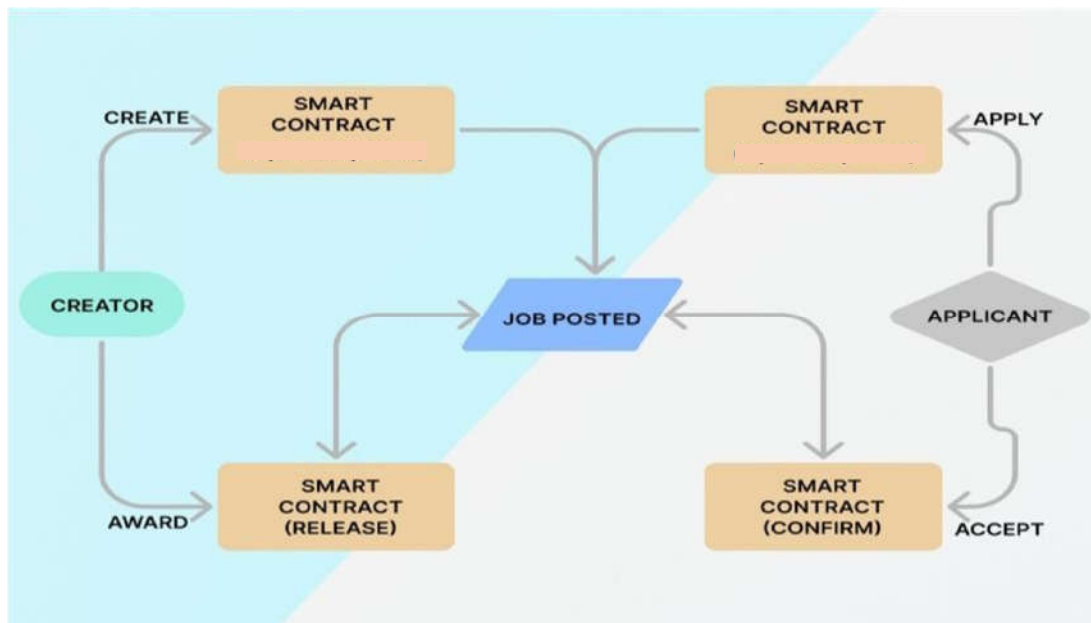

Figure 1: Smart Contract Model

Figure 1 shows four (4) components which are the creator, applicant, smart contract application and the posted job. A creator creates and awards a job to an applicant while an applicant applies and accepts a job offer, upon each milestone or job completion according to the agreed contract between the parties involved, the creator releases and the funds on the escrow are sent to the applicant awaiting confirmation. Other components of the system noteworthy are appeal and contract or job termination.

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[7] Shuai Wang and others, 'Blockchain-Enabled Smart Contracts: Architecture, Applications, and Future Trends', *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 49.11 (2019), 2266–77 <https://doi.org/10.1109/TSMC.2019.2895123>.

Both creator and applicant can appeal against/for an unfavourable or favourable condition if need be and upon dissatisfaction due to incompetency or other reasons, the creator can terminate a certain contract as the system payment mechanism is based on milestones to checkmate incompetency.

In general, the system follows a similar model to Upwork and Binance's P2P transaction mechanism of release and confirm.

V1.0 Release

This follows a roadmap of Q3 2023 as the date for its official release, this roadmap can be found at http://www.berylsuites.com/ and is subject to review upon updates.

Tokenomics

The **Beryl Token (BERYL)** is not an investment token, its purpose is to be used on the beryl dApp as a means of requirements for job creation and application, BERYL token are offered as rewards for support and may be spent without restriction on the **Algorand blockchain**.

The BERYL is an atomic unit of value exchange within the platform, creating a transactional economy between clients, freelancers, and other players. Users may earn BERYL and spend them on services provided by the Beryl Platform. Participants earn BERYL through support or performing active work (actual work and activities) or delivering services to the Network (for example, rating or curating data, developmental services, marketing and business services, etc.

Launchpad Access: BERYL serves as the primary utility token for accessing the launchpad platform on the Algorand blockchain. Holders of BERYL will have exclusive early access to participate in promising project launches.

Job Application Fees: Freelancers seeking job opportunities on the Algorand blockchain platform will be required to use BERYL as a fee for applying to job listings. This ensures a fair and efficient job matching process.

Governance and Voting: BERYL holders will have the power to participate in platform governance and decision-making processes. They can vote on proposals, such as project listings and platform enhancements, ensuring a decentralized and community-driven ecosystem.

Staking and Rewards: BERYL holders will have the opportunity to stake their tokens and earn additional rewards, fostering long-term engagement and loyalty within the ecosystem.

Sustainable Distribution and Supply

BERYL has a total supply of **One hundred million** (100,000,000) and follows a tokenomics distribution in table 1.

Table 1: Token Distribution

Initial Token Sale	50%
Marketing and Partnership	5%
Platform Development	25%
Community and Ecosystem	5%
Team / Advisors	15%

Community Powered

Beryl finance is fully decentralized and owned by its community. We welcome and embrace diverse perspectives to build Beryl finance to the best community.

Mechanism and Liquidity

The lack of market liquidity impacts blockchain freelancers as well, because they are paid in tokens, and only if the project generates enough worth through a successful ICO, freelancers will seek to cope by working for different projects all at the same time. If a project fails or a token is not listed on a major crypto-currency exchange, they may end up working for free. In the event where Beryl token is used as a means of payment, we will seek to provide a standardized payment method for blockchain freelancers as well as a strategy to ensure Beryl token market liquidity is devoid of excessive volatility.

Network Quality Control

These are security measures and procedures taken to ensure that the quality of our product remains decentralized and acceptable.

User Verification

Beryl with respect to the freelancing dApp will require KYC for job applications or creation aside github and emails which are required as a means of quality control and user competence.

Network Reputation

A reputation system, in general, evaluates how much an individual is trusted by a community.   It should be based on the prior transactions and interactions of the participant with other players. The stronger a person's reputation on the network, the more other users are ready to communicate and transact with that participant. There will also be some form of incentives to be given to users who maintain a high reputation score, this will be done to motivate other users to reach such levels and thus improve the platforms viability.

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Internal Scoring

An internal scoring algorithm is used to rate all Beryl participants. This rating should be made public and calculated using a variety of characteristics such as their platform reputation, number of followers, and level of verification of their profile.

Transaction limits

- Unlimited transaction limit for registered users

Business Model

- The Beryl Network is a Nash-equilibrated system where each participant is Incentivized to play by the rules:
- Clients pay freelancers for the services they provide by milestones.

- Beryl, which serves as a facilitator and escrow agent, receives 0% share of each transaction completed, or applied instead when a job is awarded, the tokens used for the application are not returned but if not awarded, the tokens are returned to its owner.

- A small amount of token is required for job creation to tackle abuse of the dApp.
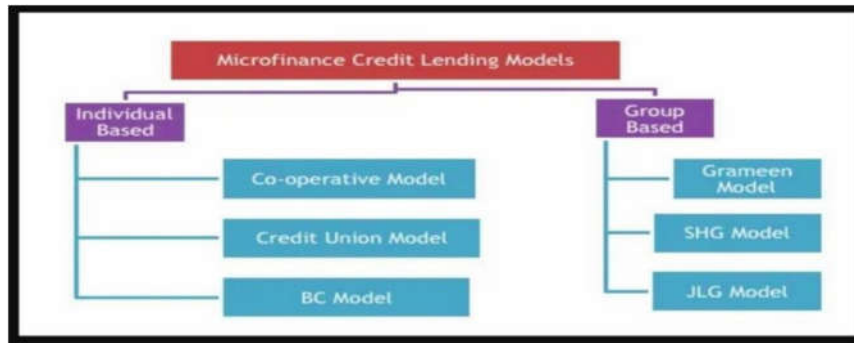
Beryl Micro Finance

Microfinance banks were founded because of the perceived deficiencies in the existing financing schemes for the poor and small businesses. They were licenced to begin operations in 2007 and existing community banks and NGO microfinance institutions that met the conditions spelt out by CBN for licencing were allowed to transmute into microfinance banks[8]. Unlike the community banking policy framework which compulsorily confined all community banks to unit banking, the microfinance banking guideline permitted the branching of microfinance banks within a state [8].

The micro finance lending protocol allow the less privileged to easily access funds for his/her business following an agreement. This same protocol will be simplified on the blockchain with documents attached, transaction IDs tied with agreement of consent in such a way that any entrepreneur with a smartphone and access to the dApp can easily get support.

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[8] Ikechukwu A. Acha, 'Microfinance Banking in Nigeria : Problems and Prospects', *International Journal of Finance and Accounting*, 1.5 (2012), 106–11 <https://doi.org/10.5923/j.ijfa.20120105.04>. [8] Acha.
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Figure 2: forex.in.rs Micro Finance Banking Model

Figure 2 shows a micro-finance lending pro taken from orex.in.rs, this approach is interpreted into a software as much detailed explanation will be added when releasing beryl 2.0 in the future.

Conclusion

This litepaper introduced beryl as a platform creating solutions for freelancing and micro-finance on a blockchain technology, the way users utilize crypto-currency has evolved. Using this technology to tackle real-world challenges is the real thing. Implementing initiatives based on this technology may result in widespread acceptance of crypto-currencies and blockchain technology. Beryl is establishing a mechanism to get employment online without the hassle of a centralized third-party platform.

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